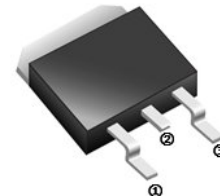


RoHS compliant product
A suffix of "-C" specifies halogen free

FEATURES

- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on V_F
- Temperature-independent Switching
- 175°C Operating Junction Temperature

TO-263(D²-PACK)

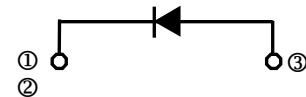


MECHANICAL DATA

- Case: Molded plastic
- Epoxy: UL94V-0 rate flame retardant
- Lead: Lead solderable per MIL-STD-202 method 208 guaranteed
- Polarity: As Marked
- Mounting position: Any

APPLICATIONS

- Switch Mode Power Supplies
- Power Factor Correction
- Motor Drive, PV Inverter, Wind Power Station



ORDER INFORMATION

Part Number	Type
SIC06X65DS-C	Lead (Pb)-free and Halogen-free

MAXIMUM RATINGS (Rating 25°C Case temperature unless otherwise)

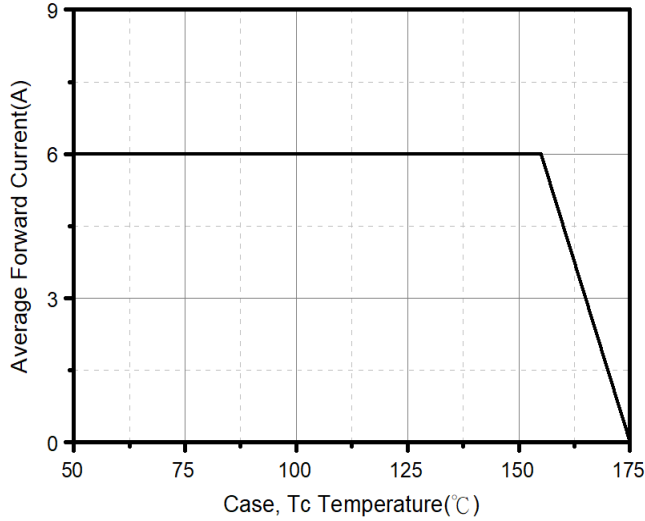
Parameter	Symbol	Rating	Unit	
Repetitive Peak Reverse Voltage	V_{RRM}	650	V	
Surge Peak Reverse Voltage	V_{RSM}	650	V	
DC Blocking Voltage	V_{DC}	650	V	
Forward Current	$T_C \leq 25^\circ\text{C}$	24	A	
	$T_C \leq 135^\circ\text{C}$	9		
	$T_C \leq 155^\circ\text{C}$	6		
Peak Forward Surge Current @8.3ms half sine-wave	I_{FSM}	60	A	
Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	91	W
Operating Junction & Storage Temperature	T_J, T_{STG}	-55~175	°C	
Thermal Resistance Ratings				
Typical Thermal Resistance Junction-Ambient	$R_{\theta JA}$	80	°C/W	
Typical Thermal Resistance Junction-Case	$R_{\theta JC}$	1.65		

ELECTRICAL CHARACTERISTICS

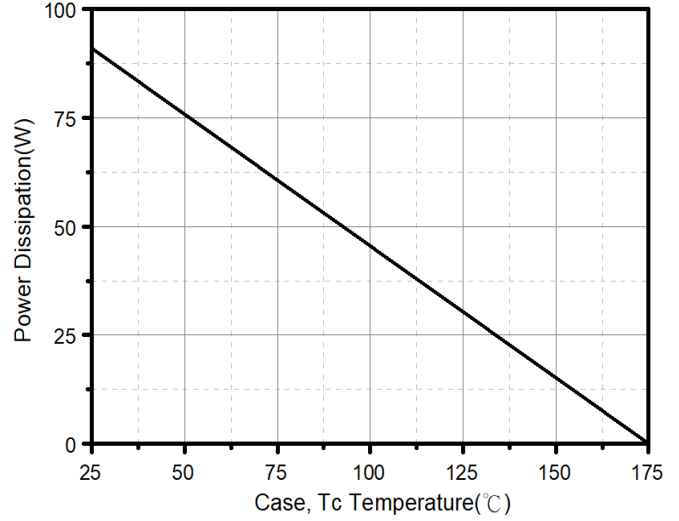
Parameter	Symbol	Typ.	Max.	Unit	Test Conditions
Forward Voltage	V_F	1.5	1.65	V	$I_F = 6A, T_J = 25^\circ\text{C}$
		1.9	2.4		$I_F = 6A, T_J = 175^\circ\text{C}$
Reverse Current	I_R	0.3	30	μA	$V_R = 650V, T_J = 25^\circ\text{C}$
		2.5	100		$V_R = 650V, T_J = 175^\circ\text{C}$
Junction Capacitance	C_J	300	-	pF	$V_R = 0V, T_J = 25^\circ\text{C}, f = 1\text{MHz}$
Total Capacitive Charge	Q_C	23	-	nC	$V_R = 400V, I_F = 6A, T_J = 25^\circ\text{C}, di/dt = 200A/\mu\text{s}$

CHARACTERISTIC CURVES

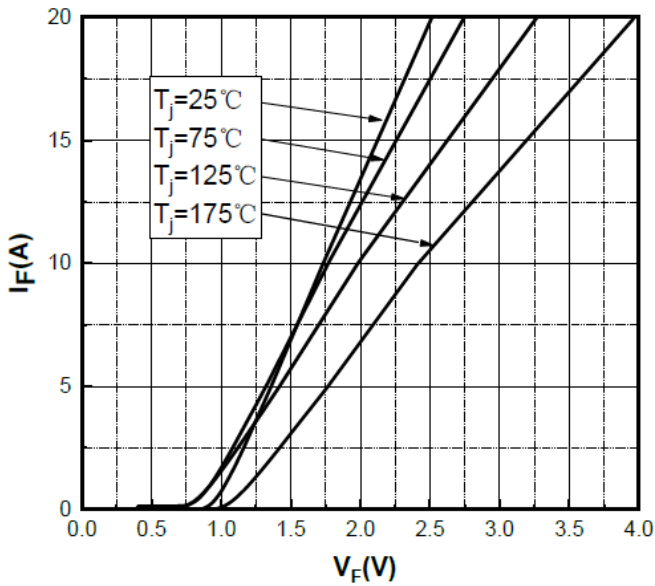
Typical Forward Current Derating Curve



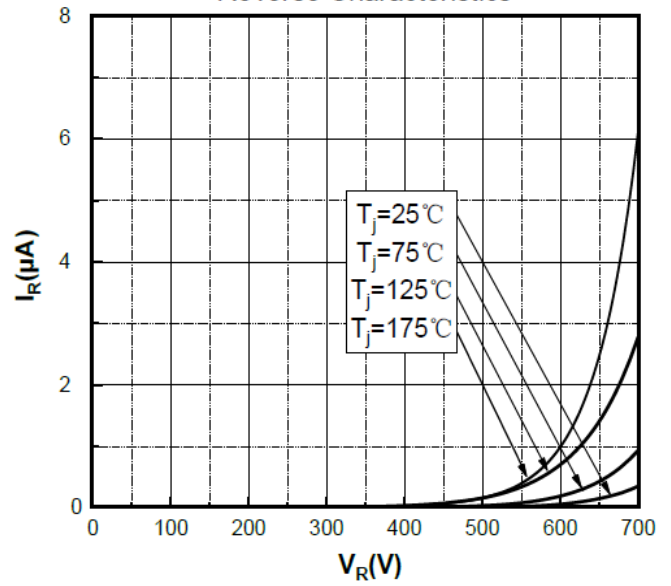
Power Derating



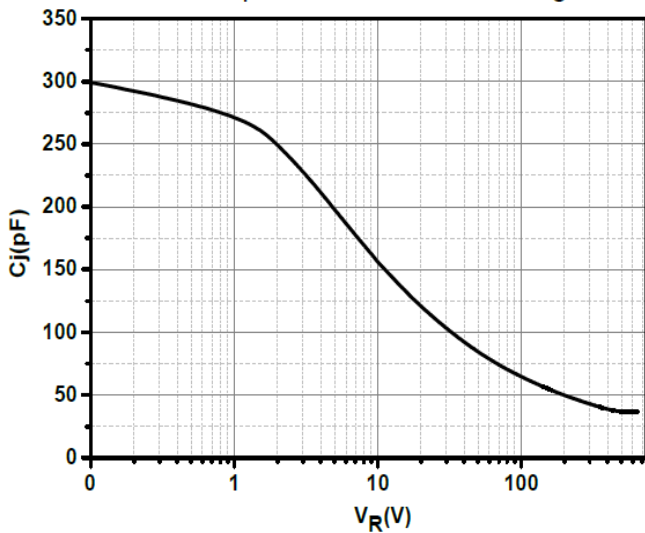
Forward Characteristics



Reverse Characteristics

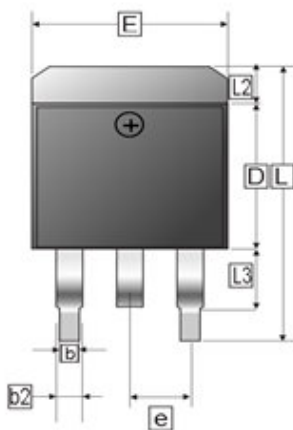


Total Capacitance vs. Reverse Voltage



PACKAGE OUTLINE DIMENSIONS

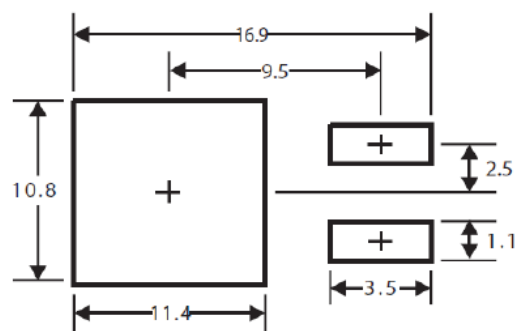
TO-263



REF.	Millimeter	
	Min.	Max.
A	4.00	4.87
b	0.508	1.01
L4	0	0.30
C	0.30	0.74
L3	1.50 REF.	
L1	2.50 REF.	
E	9.60	10.67
c2	1.07	1.65
b2	1.34 REF.	
D	8.00	9.652
e	2.54 REF.	
L	14.6	16.1
L2	1.27 REF.	

MOUNTING PAD LAYOUT

TO-263



*Dimensions in millimeters